Geography of the Information Society

Jorge Ricardo Costa Ferreira
New University of Lisbon, Portugal

INTRODUCTION

All everyday activities take place in space, and it is upon this that all information and knowledge revolve. The latter are the key elements in the organization of territories. Their creation, use, and distribution should therefore occur in a balanced way throughout the whole territory in order to allow all individuals to participate in an egalitarian society, in which the flow of knowledge can take precedence over the flow of interests.

The information society depends, to a large extent, on the technological capacity to disseminate information and, consequently, the knowledge throughout a territory, thereby creating conditions which allow a more balanced development from both the social and economic points of view thus avoiding the existence of info-exclusion territories. The Internet should therefore be considered more than a mere technology, given that its importance goes well beyond the frontiers of culture and society. It is already a part of daily life and of the new forms of thinking and transmitting information, thus making it a basic necessity essential for a full socio-economic development. Its role as a platform of creation and distribution of content is regarded as an indispensable element for education in today's society, since it makes information a much more easily acquired benefit.

In the same way that the new technologies of generation and distribution of energy allowed factories and large companies to establish themselves as the organisational bases of industrial society, so the internet today constitutes the technological base of the organisational form that characterises the Information Era: the network. (Castells, 2004, p. 15)

The changes taking place today in regional and urban structures are increasingly more evident due to a combination of factors such as faster means of transport, more efficient telecommunications, and other cheaper and more advanced technologies of information and knowledge. Although their impact on society is obvious, society itself also has a strong influence on the evolution of these technologies. And although physical distance has lost much of the responsibility it had towards explaining particular phenomena of the economy and of society, other aspects such as telecommunications, new forms of mobility, the networks of innovation, the Internet, cyberspace, and so forth, have become more important and are the subject of study and profound analysis. The science of geographical information allows, in a much more rigorous way, the analysis of problems thus integrating in a much more balanced way, the concepts of place, space, and time.

Among the traditional disciplines that have already found their place in this process of research and analysis, we can give special attention to a geography of new spaces, which, while not being a geography of "innovation," nor of the "Internet," nor even "virtual," which can be defined as one of the "Information Society," encompassing not only the technological aspects but also including a socio-economic approach.

According to the last European statistical data, Portugal shows a deficit in terms of information and knowledge dissemination among its European partners. Some of the causes are very well identified—low levels of scholarship and weak investments on innovation and research and development (R&D), both private and public sector—but others seem to be hidden behind socio-economical and technological factors. So, the justification of Portugal as the case study appeared naturally on a difficult quest to find the major causes to territorial asymmetries. The substantial amount of data needed for this work was very difficult to obtain and for the islands of Madeira and Azores were insufficient, so only continental Portugal was considered for this study.

In an effort to understand the various aspects of the geography of the Information Society and bearing in mind the increasing generalized use of information technologies together with the range of technologies available for the *dissemination* of information, it is important to:

1. Reflect on the geography of the new sociotechnological spaces.
2. Evaluate the potential for the dissemination of information and knowledge through the selection of variables that allow us to determine the dynamic of a given territory or region.
3. Define a geography of the Information Society in continental Portugal.

THE NEW SOCIOTECHNOLOGICAL SPACES

Two Spaces, One Geography

The information society differs from traditional society in many aspects. It is, however, in its geographical organization that one may find more changes which, though almost unquestionable, are difficult to quantify. The manner in which place is perceived, how space is organized, and how a community is constructed is influenced in proportion to the technologies of information.

The ability of land and place to define our identity is also changing with the replacement of the physical by the electronic. The landmarks of places and the importance of proximity, remain important factors in our daily lives, but what can we expect from the erosion of physical space by electronic space? (Wilson & Corey, 2000, p. 1)

However, in spite of the proximity and/or the geographical distance being increasingly smaller, factors which constrain society analogous to this geographical notion will continue to exist, whether it is on the Internet or in the mind of its users.

The society of information imposes new methodologies of analysis. To measure and represent the new information accessibilities, to map out new communities and to find new patterns and models of localization seem to be the challenges we face today. In physical and real space, the localization of a point is defined by two or three geographical coordinates but in the virtual space of a network or in cyberspace, geography is unable to define it, since at the present time we do not possess a model capable of giving an answer to one of the simplest questions of humanity—its localization.

Comparison is unavoidable. In the same way that mariners departed on their voyages of discovery without a map to orient themselves with, so do the "new discoverers" venture out onto the Internet network. The difference resides in only one aspect: we know where we want to get to, but we do not know where the sites that we visit are effectively situated. Like the concept of localization, others such as distance, direction, and type of transport raise doubts and require some kind of theoretical foundation. Faced with these and other questions, a variety of fields of study arise which, taking into consideration geographical science as the point of departure, use its concepts in order to try and explain that which sometimes escapes palpable and tangible understanding of our day to day lives.

During the first half of the 1990s, a number of works were published in which geography was the central element but always complemented by a collection of other variables whose common denominator were information technologies. For example, Goddard (1990, 1992, 1995) edited a series of books on the "geography of information" and regional and urban development; Hepworth (1990) and Ll (1995) wrote on the topics of "the geography of computers" and information technologies; Kellerman (1993) and Graham and Marvin (1996) dedicated their efforts to "the geography of telecommunications"; and Feldman (1994) wrote about the "geography of innovation." The appearance of the Internet as a phenomenon of the masses in the mid-1990s resulted in a whole bibliography dedicated to the questions of cyberspace in its various aspects: the "geography of the Internet," "cyber geography" or the "geography of cyberspace," and "virtual geography."

The information society is a fertile field for theorizations. However, some variables are too important to remain only in the theoretical field. It is necessary to identify and materialize them. Geography is the common "mold" that can be used for this materialization. Basically, a common science for the identification and a deeper understanding of the phenomena which find expression on the land and which are today fundamental for the analysis of society.

The Geography of the Information Society

The possession of information as well as the capacity to produce, distribute, and consume it have become powerful elements in the society of today. Given its capacity to substitute or reduce the importance of various *inputs* (raw materials, work, space, and capi-

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